

## **REMARKS**

### ***Specification***

The specification has been amended in accordance with MPEP 2163.06 to merely clarify the embodiments described therein. In particular, changes have been made in phraseology to provide consistency and proper antecedent basis for the terms used and to add and/or remove numerals to reconcile the specification with the drawings. In addition, paragraph [26] has been amended to identify abutting 52a, 52b and bearing surfaces 52c, 52d of bushing 52 and the manner in which the surfaces 52a, 52b, 52c, 52d engage first 38 and second 40 wheel hubs of a wheel end assembly. Figure 3 clearly supports the changes made to paragraph [26], namely:

The bushing 52 includes first 52a and second 52b abutting surfaces perpendicular to one another. The first abutting surface 52a axially engages the first wheel hub 38 relative to the axis 30. The second abutting surface 52b radially engages the first wheel hub 38 relative to the axis 30. The bushing also includes first 52c and second 52d bearing surfaces perpendicular to one another and parallel to the first 52a and second 52b abutting surfaces, respectively. The first bearing surface 52c axially engages the second wheel hub 40 relative to the axis 30. The second bearing surface 52d radially engages the second wheel hub 40 relative to the axis 30.

### ***Drawings***

The drawings have been amended by adding numerals to Figures 3, 6A, 6B, and 7. In particular, numerals 52a, 52b, 52c, and 52d were added to Figure 3 to identify the abutting 52a, 52b and bearing 52c, 52d surfaces of the bushing 52, as discussed above. Numerals 66, 68, and 70 were added to Figures 6A and 6B to illustrate double-row tapered roller bearing 66, bearing members 68, and races 70 as discussed in the original specification with reference to these Figures. Numeral 46 was added to Figure 7 to illustrate the wheel rims 46, as disclosed in the original specification with reference to Figure 7. Errant lines were also removed in Figure 5. Applicant respectfully submits the Replacement Sheets to replace all Figures in accordance with the new amendment format proposed under 37 CFR §1.121.

### ***Claims***

Claims 1-3, 7-9, 15, and 18-22 remain in the application with claims 1 and 20 being independent. Claims 4-6, 10-14, and 16-17 have been canceled. Claims 18-22 have been added.

### ***Allowable Subject Matter***

Dependent claims 4-5 and 16-17 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Former dependent claim 4 has been rewritten as independent claim 20 and maintains the scope believed to be allowable by Applicant. Therefore, Applicant respectfully submits that claim 20 is now in condition for allowance. Applicant respectfully submits that new dependent claims 21-22 are also in condition for allowance based on their dependency to claim 20, and the failure of the references to suggest claim 20.

### ***Claim Rejections - 35 U.S.C. §102(b)***

Claims 1-3, 9-11, and 13-14 stand rejected under 35 U.S.C. §102(b) as being anticipated by Ash. Claims 1-3, 9, and 13-15 stand rejected under 35 U.S.C. §102(b) as being anticipated by Higbee. These rejections are now moot based on the arguments presented below with respect to claim 1, and the failure of the references to suggest claim 1, as amended.

### ***Claim Rejections - 35 U.S.C. §103(a)***

Dependent claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Ash (U.S. Pat. No. 1,979,598). Claim 12 has been canceled. Dependent claims 6-7 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Higbee (U.S. Pat. No. 1,809,699) in view of Kallenberger (U.S. Pat. No. 5,290,069). Dependent claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Higbee and Kallenberger, and further in view of El-Kassouf (U.S. Pat. No. 5,971,413).

Claim 1 has been amended to incorporate the limitations of dependent claim 6 therein. Hence, Applicant respectfully traverses the rejection to dependent claim 6.

The invention as now claimed in claim 1 defines over the prior art or any combination

thereof by reciting a wheel end assembly 28 comprising a spindle 32 defining an axis of rotation 30, a first wheel hub 38 supported by at least one first bearing member 34a for rotation about the axis 30, a second wheel hub 40 supported by at least one second bearing member 34b for rotation about the axis 30, and at least one **bushing 52** mounted between the first 38 and second 40 wheel hubs and **axially and radially engaging both the first 38 and second 40 wheel hubs** to support axial and radial loads between the first 38 and second 40 wheel hubs thereby permitting the first 38 and second 40 wheel hubs to rotate independently of one another.

Higbee discloses a wheel end assembly comprising a spindle 60 defining an axis of rotation, a first wheel hub 22 supported by at least one first bearing member 16 for rotation about the axis, a second wheel hub 18 supported by at least one second bearing member 14 for rotation about the axis, and a third bearing member 24 mounted between the first 22 and second 18 wheel hubs to permit the first 22 and second 18 wheel hubs to rotate independently of one another. However, as noted by the Examiner, the third bearing member 24 is **not a bushing axially and radially engaging the first 22 and second 18 wheel hubs** relative to the axis to support axial and radial loads between the first 22 and second 18 wheel hubs. Instead, the third bearing member 24 only radially engages the first 22 and second 18 wheel hubs to support radial loads between the first 22 and second 18 wheel hubs.

Kallenberger discloses a bushing 10 for use in mechanical drive trains to support radial loads. In particular, the bushing 10 of Kallenberger is a standard bushing for radially supporting a rotating shaft 13 within a housing 11. Kallenberger does not disclose a wheel end assembly. As a result, the Examiner has combined the bushing 10 of Kallenberger with the wheel end assembly of Higbee to arrive at the present invention, as claimed in amended claim 1. However, the bushing 10 in Kallenberger **does not axially and radially engage** two components, e.g., wheel hubs, to support both axial and radial loads between the two components, as required by amended claim 1. The bushing 10 of Kallenberger radially engages the rotating shaft 13 and housing 11, but does not axially engage both the rotating shaft 13 and housing 11. Hence, even if Higbee and Kallenberger could be properly combined, they do not teach all of the limitations of amended claim 1. Hence, the Examiner has not established a *prima facie* case of obviousness.

Furthermore, there is no motivation, teaching, or suggestion to combine Kallenberger with Higbee as suggested by the Examiner. Higbee relies on a thrust bearing assembly 32 and an annular thrust plate 34 to absorb axial loads from either of the two wheel hubs 18,22. At the same time, Higbee relies on the third bearing member 24 to absorb radial loads between the two wheel hubs 18,22. Adding a bushing to axially and radially engage the two wheel hubs 18,22 to support both axial and radial loads between the two wheel hubs 18,22 would ruin the intended operation of Higbee. Higbee intentionally designed the wheel end assembly to utilize two components to absorb axial and radial loads. Higbee did not intend, nor suggest, using one component capable of absorbing both axial and radial loads. Moreover, adding such a bushing would require extensive redesign of the wheel end assembly of Higbee and there is no suggestion or motivation in Higbee for such a redesign.

In summary, neither Higbee, nor Kallenberger disclose a bushing **axially and radially engaging** first and second wheel hubs relative to an axis to support both axial and radial loads between the wheel hubs. Additionally, there is no motivation, teaching, or suggestion to combine Kallenberger with Higbee. In fact, adding the references would ruin the intended operation of Higbee. For these reasons, Applicant respectfully submits that claim 1 is in condition for allowance.

Applicant respectfully submits that dependent claims 2-3, 7-9, 15, and 18-19 are also placed in condition for allowance based on their dependency to claim 1 and the failure of the references to suggest claim 1.

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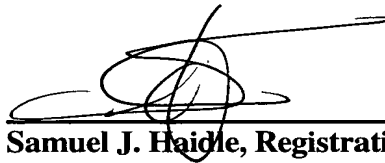
Applicant believes the application is now in condition for allowance, which allowance is respectfully solicited. Applicant believes that no additional fees are required, however, the Commissioner is authorized to charge our Deposit Account No. 08-2789 for any additional fees or credit the account for any overpayment.

**Respectfully submitted,**

**HOWARD & HOWARD ATTORNEYS**

**August 8, 2003**

**Date**



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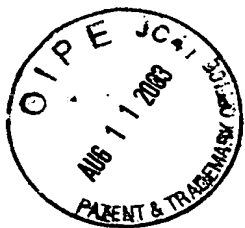
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I hereby certify that this Amendment is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to the U.S. Patent and Trademark Office, **MAILSTOP AMENDMENT - NO FEE**, PO Box 1450, Alexandria, VA 22313-1450 on August 8, 2003.

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